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Mesoleptus sp.
Tryphon four, undetermined sp.
Polyblastes sp.
Bassus two, undetermined sp.
Bassus sychophanta Walsh.
Coleocentrus sp.
Ephialtes sp.
Theronia sp.
Pimpla tenuicornis Cress.
Pimpla inquisitor Say.
Polysphincta sp.
Glypta tuberculifrons Cress.
Glypta rufiscutellaris Cress.
Arenetra ventralis Cress.
Lampronota rufipes Cress.
Xylonomus stigmapterus Say.
Xylonomus albopictus Cress.

A NEW SPECIES OF PEMPHIGUS OCCURRING ON THORN.

BY F. ATWOOD SIRRINE.

Œstlund[1], in describing the characters and work of *Aphis crataegifoliæ* Fitch, says: "Found on leaves of *Crataegus* corrugating them. Specimens taken during May on *Crataegus tomentosa* Linn, were found to curl the leaves very much, and as they turned dark brown or red they became very conspicuous."

The past season what was taken to be the fundatrix of a *Schizoneura*, possibly *crataegi*, was found May 23d corrugating the leaves of *Crataegus tomentosa* (?) and at the same time causing them to turn a bright red or scarlet color. The fundatrici of what was supposed to be *Aphis crataegifoliae* were found at the same time and on the same plants, curling the leaves but not to such an extent as the supposed *Schizoneura*, nor did they cause the leaves to change color.

Later in the season as *Aphis crataegifoliae* increased in numbers they were found in the colored corrugated leaves with the *Schizoneura*? On June 26th winged specimens of the latter were obtained. The venation of the wings proved that they were *Pemphigus* and not *Schizoneura*. By the 10th of July these had all left the Hawthorn. On October 7th, dead, shriveled specimens of *Pemphigus* were found under the rough bark of Hawthorn (*Crataegus tomentosa* Linn.) which agreed in venation with the form taken in the curled leaves in the spring; an oviparous female was also taken, though the latter may have been an oviparous female of *Schizoneura*, as both

[1]Synop. Aphididae of Minn. (Bull. No. 4, Geol. and Nat. Hist. Surv. Minn. p. 51.)

the *Schizoneura* and *Pemphigus* females are known to occur under the rough bark of trees. To the naked eye the form taken in June resemble the color of the corrugated leaves, while older specimens of the fundatrici, being covered with a pulverulent secretion, aside from the flocculent secretion near cauda and sides of the body, are of a bluish purple.

Though this may prove to be the spring migrant of a form already described, and named, as occurring on some other plant, it does not agree with any description of *Pemphigus* to which I have access, moreover no *Pemphigus* has been described as occurring on Hawthorn. Hence the specific name of *corrugatans* from its habit of corrugating the leaves on which it feeds, is proposed for the present, or until its complete life cycle shows it to be one stage of a known species. The following descriptions of the fundatrix, pupa and alate migrant are appended:

Pemphigus corrugatans, n. sp.

Alate Vivip. form, Spring Migrant, from corrugated colored leaves of *Crataegus tomentosa (?)*, June 26th, 1893.

Expanse of wings, 6.52 mm.; length of body, 2.35 mm.; width, 1.10 mm.; length of antennæ, 0.85 mm.; (Joint I., .05 mm.; II., .07 mm.; III, .30 mm.; IV., .13 mm.; V., .17 mm.; VI. plus unguis, .16 mm.); Joint III, with about fifteen transverse sensoria. In some cases part of these are double, making upward of twenty-five in all; IV., with from six to twelve; V., with from three to five; VI., slightly roughened. (These sensoria are situated on raised portions of chitine, so they appear as transverse ridges, but not as complete chitinous rings in any case). Rostrum reaching second pair of coxae. Distance between base of first and second discoidals varies from 0 to .08 mm., in some cases the second discoidal is united with the first for a distance of .20 mm. Distance between base of cubital and second discoidal varies from .05 mm. to .10 mm.; the former subobsolete at base. Stigmal with a simple curve. Distance between apices of all the veins approximately equal; (the apices of the stigmal and cubital may average a trifle nearer than the others). Stigma, .59 mm. by .16 mm., rhomboidal. Distance between discoidals of the posterior wings approximately the same as in anterior pair; costal abruptly curved forward where the discoidals issue.

Color.—(Specimens not mounted, observed with hand lense) antennæ, head and wing callosities black; thorax, yellowish green; eyes, brown; legs, dusky. The two median and the lateral lines of dermal wax glands* secrete the longest flocculent material, so there is a ridge of the latter between the wings, and a margin of the same at the sides of the body. These masses of waxy secretion crowd the wings into an oblique position. (The variation in the length of the secretion from the dermal glands is true for the pupa, and larval fundatrix; those on the latero-caudal portion of the abdomen secreting the longest flocculent material so the body appears flattened.)

(Specimens mounted in balsam and examined with compound microscope) ground color yellowish green, apex of abdomen a shade lighter; wing callosites dusky to black, antennæ and head somewhat darker; pro-

* On the abdomen there is a dermal gland on each segment between the median pair and the one on the lateral margin. As far as observed in *pemphigus* there are a pair of these glands on the head, two pairs to each thoracic segment, a median pair and one on each lateral margin; three pairs to each abdominal segment, median, submedian and lateral. Those on the abdomen are united in some instances, especially toward the cauda.

thorax with a narrow black line on the anterior dorsal margin; eyes brick red; legs dusky; wing insertions yellow, apex of beak dusky, remainder, unicolorus with body. Cauda distinct. The median dorsal glands larger than either the lateral or the submedian.

Pupa—Length of body, 3.09 mm.; width. 1.39 mm.; length of antennæ, .83 mm ; separation between joints, III and IV, not distinct; sensoria, not distinct. Cauda, distinct, .22 mm. long. Rostrum reaches second coxæ, sometimes beyond.

Color—(Unmounted, examined with hand lense.) Yellowish green; wing pads, whitish. (Mounted, examined with compound microscope.) Whole body light green with a yellow tinge, sometimes yellowish white, depending on age after moulting; antennæ, wing pads and legs whitish; eyes, brick red. The last abdominal segments are crescent shaped, producing an indenture each side of the cauda.

Fundatrix—Length of body, 3.66 mm.; width, 2.74 mm.; length of antennæ, .87 mm. (Joint I, .087 mm.; II, .12 mm.; III, .24 mm.; IV, .14 mm.; V, .14 mm.; VI with unguis, .15 mm.); separation between III and IV not distinct in immature forms. Beak, barely reaching second coxæ.

Color—(To naked eye) Greenish purple; (mounted, examined with compound microscope) olive green with a yellow tinge.

HACKBERRY PSYLLIDÆ FOUND AT AMES, IOWA.

BY CHAS. W. MALLY.

The insects now under consideration belong to the family *Psyllidae;* sub-family *Psyllinae;* and the genus *Pachypsylla.* The genus, according to Dr. C. V. Riley, "has no equivalent in the European fauna; but some allied, still undescribed, genera occur in the New World."

The species which first attracted attention was *Pachypsylla celtidismamma.* Some observations were recorded during the autumn of 1891, but no regular observations were made till March, 1892. At this time the weather was cold, and the adult insects were hidden away in the cracks and creases of the hackberry bark. It was difficult to find them at first, because their general color closely resembles that of the bark. Large numbers of the adults were found on the sticks and pieces of bark that were lying around under the trees. The old hackberry leaves were examined with special reference to the galls that remained over winter, and in no case was a gall found that contained a living larva, proving that in this case, at least, they had issued from the gall in the fall and transformed to the adult stage. Some difficulty was experienced in finding the old leaves as they had probably been carried away by the wind. If any of the larvæ fail to issue in the autumn, the evidence seems to prove that they perish in the galls.

The chief hiding-place of the adults is in the rough sheltering bark of the